The "Sell in May and Go Away" Effect: Prevalent or Mythical Anomaly

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Abstract

The purpose of this study is to empirically examine the "Sell in May and Go Away" Effect over the period ranging from 1970 to 2010. This paper examines 50 worldwide markets and finds that the Sell in May Effect is more evident in developed than in emerging markets. The Sell in May effect does have a stronger presence in Europe and in a number of countries that were former colonies or under direct influence of European countries, which may lead these emerging markets to be more highly correlated to developed markets. Sub-periods results show that the Sell in May effect is non-stationary. It is found that the strong presence of the Sell in May effect in Europe during the period of 1990-1999 is less apparent during the most recent sub-period of 2000-2010.

I. Introduction

The study of calendar anomalies persists despite Fama's (1970) discussion on the subject of efficient capital markets. Evidence of calendar anomalies challenges the weak-form of the Efficient Market Hypothesis (EMH), in which the market is efficient in historical price information and cannot predict future market movements. Camps on both sides continue to debate the question posed by the title of Lakonishok and Smidt's (1988) article "Are Seasonal Anomalies Real?". Lakonishok and Smidt's (1988) examine the characteristics of the U.S. Dow Jones Industrial over a ninety-year time span and conclude that anomalous returns indeed exist for the turn of the week, month, and even year. Malkiel (2003) counter-argues that "the general problem with these predictable patterns or anomalies, however, is that they are *not* dependable from period to period. Wall Street traders now joke that the 'January effect' is more likely to occur on the previous Thanksgiving. … They do not appear to offer arbitrage opportunities that would enable investors to make excess risk adjusted returns." The spate of research on well-known anomalies such as the January effect and holiday effect has also incurred valid critiques of data mining or data snooping. Nevertheless, calendar anomalies have withstood decades of academic interest and investigation. These studies persist to examine whether or not such market anomalies still exist; and if they do, what are the potential explanations underlying these "anomalies". One calendar anomaly, the Halloween Indicator (or "Sell in May and Go Away" effect), has received some academic attention, but not in the magnitude of other anomalies, rendering it ripe for further analysis.

The "Sell in May and Go Away" Effect, also popularly known as the Halloween Effect or Halloween Indicator, posits that stock returns are significantly lower during the six-month period from May through October (the pre-Halloween period) than the other half of the year from November through April (the post-Halloween period). This finding implies that investors will be able to earn abnormal profits by selling stocks in May, going away during the pre-Halloween

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period, purchasing stocks in November and investing during the post-Halloween period. Since the documentation of the "Sell in May and Go Away" effect (simplified as the Sell in May effect in this study) by Bouman and Jacobsen (2002), several studies (Lucey and Zhao (2006); Maberly and Pierce (2004); and Ciccone and Etebari (2007)) tried to refute the existence and/or statisticalsignificance of the Sell in May effect for the U.S. market by accounting for outliers or adopting a more stringent testing methodology. Furthermore, studies such as Cao and Wei (2005), Jacobsen and Marquering (2008) and Doeswikj (2008) investigate the presence of the Sell in May effect from the viewpoint of behavior finance.

In this study, we re-examine the Sell in May effect by expanding the variety of sampling countries and the length of the testing periods. Our empirical results support Bouman and Jacobsen (2002) in that 28 of 50 worldwide markets – as opposed to 20 of the 37 markets in their study – show evidence of a statistically significant Sell in May effect. When the January effect is accounted for, 22 countries (14 countries in Bouman and Jacobsen (2002)) show a significant Sell in May effect. We find that the Sell in May effect appears more in developed than in emerging markets. The Sell in May effect does have a strong presence in Europe and in a number of countries that were former colonies or under direct influence of European countries, which may lead these emerging markets to be more highly correlated to developed markets.

While Bouman and Jacobsen (2002) do not test this apparent anomaly over sub-periods, Maberly and Pierce (2003) report that in the case of Japan, the Sell in May anomaly appears to have faded since the mid-1980s. To investigate the stationarity of the anomaly, our paper examines all 50 worldwide markets broken into sub-periods. Our sub-period results show that the Sell in May effect is non-stationary. It is found that the strong presence in Europe during the period of 1990-1999 is less apparent during the most recent sub-period of 2000-2010. Nevertheless, the effect does not appear to have occurred during any particular sub-period or range of years. As a result, it suggests greater difficulty in exploiting this "anomaly".

This study begins with a literature review in Section II, followed by discussion of methodology and data description in Section III. Empirical results are discussed in Section IV, with a concluding Section V.

II. Literature Review

The "Sell in May and Go Away" Effect, also popularly known as the Halloween Effect or Halloween Indicator, posits that stock returns are significantly lower during the six-month period from May through October (the pre-Halloween period) than the other half of the year from November through April (the post-Halloween period). Such market anomaly appears to attract the general public investors and economists' attention more than that of the financial analysts, practitioners, and academics. Indeed, references to the Sell in May effect as an "old Wall Street adage" appear in mainstream news outlets as if the anomaly is a certainty, and hence is precluded from any questions of its veracity in worldwide stock markets (Twin, 2007). On the other hand, numerous academic studies on other calendar effects, such as the January effect, Turn of the Month effect, and Holiday effect have rendered these effects both significant to academics and practitioners. These empirical evidences reveal unmistakable messages about calendar anomalies—namely, that a calendar effect introduces an arbitrage opportunity based solely on timing, be it a certain day of the week or a certain month of the year.

Bouman and Jacobsen (2002) strongly endorse the existence of the Halloween Indicator, as they find the effect in 20 of the 37 countries over a 28-year period (1970-1998).[1] Their study documents that the strongest and most significant presence of the effect is found in the cases of European countries. When a more stringent regression is adopted to adjust for the January effect, the Sell in May effect still exhibits for 14 of 20 countries.[2] By design, this model specification tends to underestimate the Sell in May effect. Hence, they conclude that the Sell in May effect is not the January effect in disguise. Finally, comparing the profitability of the Halloween strategy with that of the annual buy-and-hold strategy, they report that the Halloween strategy outperforms the buy-and-hold strategy except for Hong Kong and South Africa.

Bouman and Jacobsen (2002) also conduct cross-sectional analysis in an attempt to determine the potential drivers of the Sell in May effect. They find that the Sell in May effect seems to be unrelated to interest rate levels due to the observation that interest rates are not significantly higher during the pre-Halloween period. Yet, trading volume is found higher during the post-Halloween period. Furthermore, the finding of lower pre-Halloween returns in both of the Northern and Southern hemisphere countries suggests that the effect is not vacation-driven. Otherwise, one could expect to observe lower post-Halloween returns for the Southern hemisphere countries where the summer vacation period coincides with the post-Halloween period. The Sell in May effect is not news-driven because there is no evidence that more negative news is reported in the pre-Halloween period than in the post-Halloween period. Finally, they also report that the effect is not sector-specific.

Studying the Russian Trading System Stock Exchange (RTS) over a ten-year period from 1995 to 2006, Reichling and Moskalenko (2007) document that the optimal time to enter the RTS market was at the end of September and the optimal time to exit was May, thus illustrating the Sell In May effect. However, the ultimate conclusion drawn from their study is that the Sell in May strategy inconsistently exists. As a result, the Sell in May strategy providing premium returns in one year does not guarantee premium returns in any subsequent period. Therefore, the Sell in May Strategy may prove only to be an old Wall Street saying and nothing more.

Inquiries challenging the results found in Bouman and Jacobsen (2002) have also been performed by Maberly and Pierce (2003) in a sub-period study on the Japanese and U.S. markets as well as by Maberly and Pierce (2004) on an additional test of the anomaly's robustness. These two studies provide evidence that the use of alternative models and the exclusion of outliers could reduce the presence of the Sell in May effect. Studying Nikkei 225 Index from 1970 to 2003, Maberly and Pierce (2003) report a Sell in May effect in the Japanese stock market. The effect persists even when the January effect and the outliers issues are addressed using the regression models with dummy variables. However, they also find that the Sell in May effect is only present in Japan's stock market in the period prior to the introduction of Nikkei 225 index futures in September 1986, but the effect essentially disappears after the Japan stock market became more internationalized in the 1980s. Furthermore, conceding that in bull market

[1] MSCI reinvestment indices are used in their study.

[2] The Sell in May Dummy is assigned a value of 1 from the period of November through April except for January.

years the Nikkei 225 index provided higher returns during the post-Halloween period, but did not in the 13 bear market years (40% of the 34-year dataset), Maberly and Pierce (2003) characterize the Sell in May effect as one that "cannot be profitably exploited" (p.17).

Maberly and Pierce (2004) adopt their robust methodology to test the Sell in May effect using the value-weighted CRSP index returns from 1970-1998 as well as the S&P 500 futures from April 1982 to April 2003. Again, the authors document that a Sell in May effect is initially present in the U.S. market. However, the effect vanishes after adjusting for outliers, particularly October 1987 (stock market crash) and August 1998 (the collapse of Long-Term Capital Management hedge fund). Similarly, Ciccone and Etebari (2007) argue that the Halloween Effect is strong, but that "If January, September, and October returns are excluded, the superior November to April performance virtually vanishes" (p. 5). In other words, these studies recommend that the Sell in May effect is not stationary and can easily be caused by special economic events.

Nevertheless, recent articles such as Doeswijk (2008) argues that half of the Sell in May effect is due to market-timing and half is due to true seasonality while Jacobsen and Marquering (2008) suggest that the Sell in May effect is not caused by seasonal affective disorder (SAD), but rather remains a "puzzle".[3] As a results, the verdict on the existence of the Sell in May effect remains open to further analysis.

III. Data and Methodology

a. Data

This study employs the monthly continuously compounded stock returns of the value-weighted MSCI (Morgan Stanley Capital International) market indices (denominated in local currencies) for 50 countries. Data between January 1970 and September 2010 are collected for 18 developed countries (namely, Australia, Austria, Belgium, Canada, Denmark, France, Germany, Hong Kong, Italy, Japan, Netherlands, Norway, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States). Due to data accessibility, the remaining 32 countries' returns data sets cover different periods with start dates ranging from January 1982 to January 1995. These remaining countries represent all countries, especially emerging markets, available as MSCI reinvestment indices.[4]

In order to investigate the stationarity of the Sell in May Effect, the whole sampling period is then divided into sub-periods. For the 18 aforementioned countries, data is analyzed as a whole sampling period from January 1970 to September 2010 as well as four sub-periods with the first three sub-periods demarcated into ten-year periods (N = 120) and a fourth period covering the period of January 2000 to September 2010 (N = 129). The whole sampling period for the remaining 32 countries is also divided, but only covers the last two sub-periods.[5]

[3] Cao and Wei (2005) propose that attribute seasonal affective disorder or temperature effects on investors' moods as the cause for less optimal returns during the period from May through October.

[4] This study extends Bouman and Jacobsen's (2002) sample data set of January 1970-August 1998 with an additional twelve years of data.

[5] Two countries (Finland and New Zealand) contain data from January 1982 to September 2010 and fifteen countries (Argentina, Brazil, Chile, Greece, Indonesia, Ireland, Jordan, Korea, Malaysia, Mexico, Philippines, Portugal, Taiwan, Thailand, and Turkey) contain data from January 1988 to September 2010. The sub-period analysis for these seventeen countries only covers the period from January 1990 to September 2010.

b. Methodology

Analogous to the research model used by Maberly and Pierce (2003 and 2004), a simple regression with dummy variables analysis is adopted to test for the existence of a Sell in May effect. The regression equation is as follows:

$$\begin{aligned} R_t &= \mu + \alpha_1 S_t + \varepsilon_t \\ where\ S &= 1 \text{ if } t \text{ falls in the 6-month period between November and April,} \\ &= 0 \text{ otherwise} \\ \varepsilon &\sim N(0,1) \end{aligned} \tag{1}$$

The dependent variable, R_t, represents the continuously compounded monthly returns for the value-weighted MSCI index. Monthly returns are calculated using the natural logarithm of the price relative, or $R_t = \ln (Index_t / Index_{t-1})$. When dummy variables are excluded, equation (1) simply becomes the random walk model. The dummy variable S_t takes on the value 1 if month *t* falls in the post-Halloween period (between November and April) and 0 otherwise. The coefficient, μ, represents the monthly mean return over the pre-Halloween periods while $\mu + \alpha_1$ represents the monthly mean return over the post-Halloween periods. A positively significant α_1 suggests that monthly mean returns are larger over the post-Halloween period, and hence potential evidence of the Sell in May effect.

Given several studies (such as Bouman and Jacobsen (2002), Maberly and Pierce (2003 and 2004), and Ciccone and Etebari (2007)) have suspected the Sell in May effect occurs merely as a consequence of a strong January effect, it is important to distinguish these two effects. To test whether the Sell in May effect is itself a distinct anomaly, Equation (1) is modified by inserting a second dummy variable, J_t ,which is set equal to 1 whenever month *t* is January and 0 otherwise:

$$\begin{aligned} R_t &= \mu + \alpha_1 S_t + \alpha_2 J_t + \varepsilon_t \\ where\ S &= 1 \text{ if } t \text{ falls in the 6-month period between November and April,} \\ &= 0 \text{ otherwise} \\ J &= 1 \text{ if } t = \text{January,} \\ &= 0 \text{ otherwise} \\ \varepsilon &\sim N(0,1) \end{aligned} \tag{2}$$

Under equation (2), μ is the monthly mean return for the months of May, June, July, August, September, and October whereas $\mu + \alpha_1$ measures the monthly mean return for the months of November, December, February, March, and April. Finally, $\mu + \alpha_1 + \alpha_2$ represents the monthly mean return for the month of January.

Under this model, a significantly positive α_1 combined with an insignificant α_2 provides evidence of a Sell in May effect but no January effect. On the contrary, an insignificantly α_1

Ten countries (China, Colombia, India, Israel, Pakistan, Peru, Poland, South Africa, Sri Lanka, Venezuela) contain data from January 1993 to September 2010 which is divided into sub-period 3 (1993.01-2000.12) and sub-period 4 (2001.01-2010.09). Five countries (Czech Rep, Egypt, Hungary, Morocco, and Russia contain data from January 1995 to September 2010 which is divided into sub-period 3 (1995.01-2000.12) and sub-period 4 (2001.01-2010.09).

together with a significantly positive α_2 suggests the existence of only a January effect. If α_1 and α_2 are both significantly positive, both the Sell in May and January effects are present simultaneously. In short, if the Sell in May effect remains robust in the regression estimation of equation (2), then the coefficients of the Sell in May effect dummy (α_1) will be statistically significant even with the presence of the January dummy.

IV. Empirical Results

a. Empirical Results for the Whole Sampling Period

Figures1 and 2 report the average returns in the pre-Halloween (May-October) and the post-Halloween (November-April) periods for developed markets and emerging markets, respectively. The returns of the eighteen countries charted in Figure 1 encompass the entire dataset period of January 1970 to September 2010. It is evident that the Sell in May effect exists for developed countries. For all 18 developed countries, the returns during the post-Halloween periods are positive and higher than those in the pre-Halloween periods. In fact, 12 out of the 18 countries (67%) report negative average returns in the pre-Halloween period.

Figure 2 plots the shorter data series in our sample including many of the emerging markets. With the exception of China and Sri Lanka, positive returns are observed in post-Halloween periods. Different from the results of developed countries, only 15 out of the 32 emerging markets (47%) report negative average returns in the pre-Halloween period. Specifically, the positive pre-Halloween returns are more evident in the Latin American markets. Nevertheless, it can be clearly seen that, except for the case of China, Sir Lanka and Venezuela, post-Halloween returns still outperform pre-Halloween returns.

Tables I and II report the summary statistics and estimation results from equations (1) and (2) performed on the whole sampling period for developed markets and emerging markets, respectively. Results for equation (1) are similar to those reported in Bouman and Jacobsen (2002) in that 28 of the 50 countries exhibit a statistically significant Sell in May Effect at the 10% level.[6] Specifically, 15 of the 18 developed countries reported in Table I and 13 of the 32 emerging countries reported in Table II demonstrate a significant Sell in May effect.

To isolate the possible January effect masked in the Sell in May effect, the January effect dummy is included in Equation (2). As shown in Tables I and II, the Sell in May effect disappears for 7 of the 28 country markets with the inclusion of the January effect dummy in Equation (2). Specifically, adding the January Dummy results in an insignificant Sell in May effect in the cases of Norway (from Table I) as well as the cases of Colombia, Egypt, Finland, Greece, Hungary and Portugal (from Table II). Interestingly, Russian reports a significant Sell in May effect after the January Dummy is included. In general, although adjusting for the January effect seems to reduce the Sell in May effect, the observation that 22 countries still exhibit a significant Sell in May effect in Equation (2) supports the contention that the Sell in May effect is not completely the January effect in disguise.

Judging from the entire data sets evaluated in Tables I and II, the Sell in May effect

[6] 13 of those 28 countries remain significant at the 1% level

indeed appears to exist, chiefly in European, North American (Canada and United States only), Southeast Asian and Greater Australasian / Asian-Pacific markets. It is also present in Morocco and South Africa, two of the three African markets in this study (the third is Egypt). It is clear, however, that the emerging markets of Latin American markets—encompassing all of South America as well as Mexico in North America—do not exhibit the Sell in May effect. Brazil is the noteworthy Latin market exception that displays the Sell in May effect at the 10% level.

Given that the Western (European and North American) markets demonstrate a strong presence of the effect, it may be inferred that the remaining non-Western markets exhibiting the similar effect are either more highly correlated with Western markets or share a past via their former Western colonial or imperialistic heads of state. For example, Japan and Taiwan both exhibit a significant Sell in May effect and are easily recognized as integral players in modern world market economies with their prowess in manufacturing and technology development. Southeast Asian countries exhibiting the effect in Equation (2) include former Dutch colony Indonesia, and former British colonies Malaysia and Singapore. Additionally, former British colony South Africa and heavily French-influenced Morocco also exhibit the Sell in May effect. However, other former British colonies in Asia not exhibiting any Sell in May effect at all include Hong Kong, India, Pakistan, and Sri Lanka (Ceylon).

b. Empirical Results for Sub-periods

To test the robustness of the Sell in May effect, the data set is divided into four sub-periods for the 18 developed countries. The first three sub-periods are equal in length at ten years and cover the periods of January 1970 to December 1979, January 1980 to December 1989, and January 1990 to December 1999. The fourth sub-period rounds out the remaining years of the entire dataset in our sample, covering ten years and nine months, and spans January 2000 to September 2010. Table III presents the sub-period regression results for these eighteen countries.[7]

Under each country panel and four sub-periods in Table III, Equation (1) corresponds to the Sell in May effect and Equation (2) corresponds to the Sell in May effect with a January effect combined. Recall that 14 of the 18 countries report a significant Sell in May effect with a January effect adjustment for the whole sampling period as shown in Table I. Sub-period results reported in Table III reveal an apparent non-stationarity of the Sell in May effect over time across different countries. Examining the empirical results from Equation (2), several observations are noted. First, the Sell in May effect seems to be more evident in the 3rd sub-period given significant α_1's are found for 10 countries. Second, the Sell in May effect is more persistent in Austria, Belgium and Japan as the significant coefficients are reported for 3 out of the 4 sub-periods. However, no country in our sample exhibits the Sell in May effect consistently throughout the 4 sub-periods. Third, Canada and the United States, which display a significant Sell in May effect in Table I, do not reveal any presence of a significant Sell in May effect for any of the four sub-periods. Finally, similar to Maberly and Pierce (2003), our results in Table III show that Japan has a significant presence of the Sell in May effect in the first two sub-periods of 1970-1979 and 1980-1989, but not in the third sub-period of 1990-2000. Maberly and Pierce (2003) present that Japan exhibits the Sell in May effect for the period of January 1970-December 1986, but no such effect in the second period of January 1987-December 2003.

[7] To save space, the estimates of intercept coefficients are eliminated in the Table. The results are available on request from the authors.

They assert that the internationalization of the Japanese financial markets in 1985-86 demarcates the time in which the Sell in May effect essentially disappeared from the Japanese markets.

Table IV presents the regression results of Equations (1) and (2) for the 3rd and the 4th sub-periods of the remaining 32 countries with shorter data series. Ten countries report a significant Sell in May effect sporadically. Similar to the results found in Table III, the Sell in May effect is non-stationary over different sub-periods. Among the 8 countries reporting significant Sell in May effect in Table II, only 2 countries (Ireland and Morocco) exhibit a significant Sell in May effect in both sub-periods. Three countries (Malaysia, South Africa and Taiwan) and Indonesia report a significant Sell in May effect in the 3rd and the 4th sub-period, respectively. Brazil and Russia do not exhibit a significant Sell in May effect in neither of the two sub-periods.

In sum, Tables III and IV provide evidence that the Sell in May effect indeed appears to pervade many country markets, but without any definite worldwide patterns. The empirical evidence suggests the Sell in May effect is more evident among developed countries than emerging markets. Nevertheless, the observation that the strong presence in Europe during 1990s is less apparent during the most recent sub-period of 2000-2010 seems to be consistent with the old finance tenet that anomalies tend to disappear over time.

V. Conclusions

This study of 50 worldwide markets finds that the Sell in May effect is statistically significant in 28 of 50 worldwide markets. The fifty worldwide markets represent the majority of country market indices available from MSCI. Even with the adjustment for the January effect, 22 of the 50 worldwide markets continue to show a significant Sell in May effect. Sub-period analysis suggest that the Sell in May effect is non-stationary. Our results are consistent with those reported in previous studies that the Sell in May effect occurs in Japan over the long-run (Bouman and Jacobsen 2002) but disappears during the period between 1987 and 2003 (Maberly and Pierce 2003).

Given that data snooping is oft-cited as the force behind so-called market anomalies, the use of new data is frequently encouraged in an attempt to reduce the data mining bias. In this study, we extend Bouman and Jacobsen's (2002) data set with an additional twelve years of monthly returns. We also include more country indices in the sample. As evidenced by our empirical results, significant Sell in May effects still exist whether the analysis is conducted with longer sampling period or with wider choices of countries. Although we do not use different market indices as employed in other country-specific studies, most of their empirical results confirm that the Sell in May effect still appear over the long-term even if the national market indices are used.[8] Thus, the use of the MSCI data does not appear to factor as a source skewed in favor of harboring the presence of the Sell in May effect.

Regardless of what appears to drive the Sell in May effect, this study shows that the nature of the Sell in May anomaly proves robust in a general study of world markets over time.

[8] For example, Nikkei 225 index was used in Maberly and Pierce (2003) and the Russian Trading Stock Exchange (RTS) data was used in Reichling and Moskalenko (2007). In studies of the U.S. market for the Sell in May effect, Ciccone and Etebari (2007), Lucey and Zhao (2006) and Maberly and Pierce (2004) all used the Center for Research in Security Prices (CRSP) dataset.

At the same time, the impromptu appearance of the Sell in May effect suggests that the strategy might not be able to provide any true trading advantage or opportunity.

Table I. The Sell in May Effect: Whole Sampling Period Results for Developed Markets

This table reports the regression results of the Sell in May effect for the whole sampling period, from January 1970 to September 2010. Monthly returns are calculated using value-weighted MSCI reinvestment indices for 18 developed countries. The *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

				$R_t = \mu + \alpha_1 S_t + \varepsilon_t$ (1)		$R_t = \mu + \alpha_1 S_t + \alpha_2 J_t + \varepsilon_t$ (2)		
Country	**# of Obs.**	**Monthly Mean Returns (%)**	**Monthly Standard Deviation (%)**	**μ**	**α_1 Sell in May (No Jan. Effect)**	**μ**	**α_1 Sell in May with Jan. Effect**	**α_2 - Jan. Dummy**
Australia	489	0.46	5.86	0.001	0.010	0.001	0.008	0.003
				(0.10)	(1.59)	(0.10)	(1.42)	(0.31)
Austria	489	0.32	6.00	-0.006	0.019	-0.006	0.021	-0.012
				(-1.60)	(3.53)***	(-1.60)	(3.73)***	(-1.21)
Belgium	489	0.39	5.34	-0.006	0.020	-0.006	0.019	0.006
				(-1.85)*	(4.23)***	(-1.85)*	(3.82)***	(0.68)
Canada	489	0.57	4.98	0.001	0.011	0.001	0.010	0.004
				(0.11)	(2.37)**	(0.11)	(2.11)*	(0.48)
Denmark	489	0.74	5.20	0.005	0.005	0.005	0.000	0.025
				(1.48)	(1.07)	(1.49)	(0.18)	(2.78)***
France	489	0.52	5.91	-0.005	0.020	-0.005	0.020	0.002
				(-1.35)	(3.88)***	(-1.34)	(3.65)***	(0.16)
Germany	489	0.37	5.78	-0.004	0.015	-0.004	0.016	-0.006
				(-1.04)	(2.91)***	(-1.04)	(2.95)***	(-0.60)
Hong	489	0.61	5.49	0.006	0.008	0.006	0.005	0.019
Kong				(0.91)	(0.88)	(0.91)	(0.50)	(1.12)
Italy	489	0.40	6.78	-0.008	0.025	-0.008	0.021	0.022
				(-1.92)*	(4.08)***	(-1.93)*	(3.33)***	(1.90)*
Japan	489	0.34	5.41	-0.005	0.017	-0.005	0.017	-0.002
				(-1.43)	(3.41)***	(-1.43)	(3.32)***	(-0.21)
Netherlands	489	0.44	5.30	-0.004	0.018	-0.004	0.018	0.002
				(-1.34)	(3.78)***	(-1.34)	(3.52)***	(0.25)
Norway	489	0.63	7.45	-0.000	0.013	-0.000	0.010	0.020
				(-0.08)	(2.00)**	(-0.08)	(1.43)	(1.58)
Singapore	489	0.61	7.99	-0.002	0.016	-0.002	0.012	0.021
				(-0.43)	(2.22)**	(-0.44)	(1.65)*	(1.55)
Spain	489	0.58	5.88	-0.003	0.016	-0.003	0.015	0.005
				(-0.85)	(2.91)***	(-0.85)	(2.64)***	(0.45)
Sweden	489	0.90	6.54	-0.002	0.022	-0.002	0.021	0.009
				(-0.51)	(3.82)***	(-0.50)	(3.39)***	(0.83)
Switzerland	489	0.34	4.93	-0.000	0.010	-0.001	0.010	0.006
				(-0.15)	(2.20)**	(-0.15)	(1.88)*	(0.68)
United	489	0.57	5.68	-0.002	0.017	-0.003	0.016	0.005
Kingdom				(-0.77)	(3.35)***	(-0.77)	(3.04)***	(0.48)
United	489	0.51	4.58	0.001	0.009	0.001	0.009	-0.0000
States				(0.18)	(2.12)**	(0.18)	(2.03)**	(-0.04)

Table II. The Sell in May Effect: Whole Sampling Period Results for Emerging Markets

This table reports the regression results of the Sell in May effect for the whole sampling period, from January 1970 to September 2010. Monthly returns are calculated using value-weighted MSCI reinvestment indices for 32 emerging countries. The *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

				$R_t = \mu + \alpha_1 S_t + \varepsilon_t$ (1)		$R_t = \mu + \alpha_1 S_t + \alpha_2 J_t + \varepsilon_t$ (2)		
Country	**# of Obs.**	**Monthly Mean Returns (%)**	**Monthly Standard Deviation (%)**	**μ**	**α_1 Sell in May (No Jan. Effect)**	**μ**	**α_1 Sell in May with Jan. Effect**	**α_2. Jan. Dummy**
Argentina	273	4.49	20.34	0.037	0.016	0.037	0.018	-0.007
				(2.13)**	(0.65)	(2.13)**	(0.65)	(-0.15)
Brazil	273	7.91	17.46	0.057	0.044	0.057	0.037	0.046
				(3.85)***	(2.10)**	(3.85)***	(1.65)*	(1.15)
Chile	273	1.48	6.21	0.011	0.008	0.011	0.006	0.015
				(2.05)**	(1.06)	(2.05)**	(0.70)	(1.02)
China	213	-0.11	10.61	-0.000	-0.003	-0.000	0.007	-0.062
				(-0.03)	(-0.23)	(-0.03)	(0.47)	(-2.27)*
Colombia	213	1.58	8.34	0.006	0.019	0.006	0.018	0.009
				(0.77)	(1.69)*	(0.77)	(1.48)	(0.41)
Czech	189	0.64	7.60	-0.000	0.013	-0.000	0.014	-0.003
Republic				(-0.03)	(1.22)	(-0.03)	(1.20)	(-0.14)
Egypt	189	1.38	9.27	0.000	0.027	0.000	0.018	0.056
				(0.03)	(2.04)*	(0.03)	(1.27)	(2.26)**
Finland	345	1.01	8.65	0.001	0.018	0.001	0.015	0.016
				(0.20)	(1.94)*	(0.20)	(1.57)	(0.91)
Greece	273	0.57	9.82	-0.005	0.022	-0.005	0.020	0.011
				(-0.58)	(1.82)*	(-0.58)	(1.58)	(0.50)
Hungary	189	1.36	10.02	0.000	0.027	0.000	0.024	0.020
				(0.01)	(1.87)*	(0.01)	(1.55)	(0.74)
India	213	1.03	8.29	0.007	0.006	0.007	0.008	-0.010
				(0.85)	(0.52)	(0.85)	(0.63)	(-0.47)
Indonesia	273	1.48	11.53	-0.002	0.033	-0.002	0.032	0.006
				(-0.23)	(2.34)**	(-0.23)	(2.16)**	(0.23)
Ireland	273	-0.01	6.51	-0.014	0.027	-0.014	0.024	0.018
				(-2.53)**	(3.54)***	(-2.53)**	(3.01***	(1.20)
Israel	213	0.56	6.69	-0.001	0.014	-0.001	0.014	-0.002
				(-0.18)	(1.48)	(-0.18)	(1.44)	(-0.09)
Jordan	273	0.37	5.36	-0.001	0.09	-0.001	0.005	0.024
				(-0.14)	(1.34)	(-0.14)	(0.67)	(2.00)**
Korea	273	0.65	9.04	-0.003	0.018	-0.003	0.013	0.027
				(-0.36)	(1.62)	(-0.36)	(1.15)	(1.31)
Malaysia	273	0.64	7.76	-0.003	0.019	-0.003	0.019	0.001
				(-0.50)	(2.04)**	(-0.50)	(1.93)*	(0.05)

Table II. Continued

				$R_t = \mu + \alpha_1 S_t + \varepsilon_t$ (1)		$R_t = \mu + \alpha_1 S_t + \alpha_2 J_t + \varepsilon_t$ (2)		
Country	**# of Obs.**	**Monthly Mean Returns (%)**	**Monthly Standard Deviation (%)**	**μ**	**α_1 Sell in May (No Jan. Effect)**	**μ**	**α_1 Sell in May with Jan. Effect**	**α_2 - Jan. Dummy**
Mexico	273	2.10	7.97	0.015	0.012	0.015	0.013	-0.009
				(2.25)**	(1.19)	(2.24)**	(1.29)	(-0.50)
Morocco	189	0.75	5.15	-0.006	0.027	-0.006	0.025	0.012
				(-1.20)	(3.77)***	(-1.20)	(3.31)***	(0.90)
New	345	0.32	6.35	0.001	0.005	0.001	0.006	-0.002
Zealand				(0.14)	(0.76)	(0.14)	(0.77)	(-0.15)
Poland	213	1.36	12.29	0.004	0.019	0.004	0.015	0.020
				(0.37)	(1.10)	(0.37)	(0.86)	(0.63)
Pakistan	213	0.64	11.03	-0.005	0.019	-0.005	0.014	0.032
				(-0.44)	(1.22)	(-0.44)	(0.83)	(1.08)
Peru	213	1.58	9.43	0.010	0.012	0.010	0.015	-0.019
				(1.07)	(0.95)	(1.07)	(1.14)	(-0.77)
Philippines	273	0.79	8.32	0.002	0.012	0.002	0.009	0.017
				(0.24)	(1.14)	(0.24)	(0.81)	(0.90)
Portugal	273	0.13	6.04	-0.006	0.014	-0.006	0.012	0.015
				(-1.14)	(1.97)*	(-1.14)	(1.55)	(1.07)
Russia	189	1.07	16.81	-0.008	0.038	-0.008	0.047	-0.053
				(-0.47)	(1.56)	(-0.47)	(1.83)*	(-1.15)
South	213	0.96	6.08	0.001	0.017	0.001	0.018	-0.001
Africa				(0.23)	(2.01)**	(0.23)	(2.08)**	(-0.54)
Sri Lanka	183	0.71	9.81	0.034	-0.020	0.034	-0.014	-0.035
				(1.09)	(-0.46)	(1.09)	(-0.31)	(-0.44)
Taiwan	273	0.45	10.18	-0.015	0.039	-0.015	0.037	0.008
				(-1.79)*	(3.18)***	(-1.78)*	(2.92)***	(0.34)
Thailand	273	0.57	10.57	-0.005	0.020	-0.005	0.015	0.033
				(-0.55)	(1.57)	(-0.55)	(1.08)	(1.37)
Turkey	273	3.36	14.89	0.020	0.027	0.020	0.021	0.035
				(1.60)	(1.48)	(1.60)	(1.10)	(1.02)
Venezuela	180	1.78	11.34	0.024	-0.006	0.024	-0.002	-0.022
				(1.85)*	(-0.33)	(1.85)*	(-0.13)	(-0.63)

Table III. The Sell in May Effect: Sub-Period Results for Developed Markets

This table reports the regression results of the Sell in May effect, performed on 18 developed markets during four sub-periods: Jan. 1970 to Dec. 1979, Jan. 1980 to Dec. 1989, Jan. 1990 to Dec. 1999, and Jan. 2000 to Sep. 2010. There are 120 observations each for the first three periods, and 129 observations for the last period. The *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. To reserve space, the estimates of coefficient μ are not reported.

	Sub-period 1: January 1970 - December 1979		**Sub-period 2: January 1980 – December 1989**		**Sub-period 3: January 1990 – December 1999**		**Sub-period 4: January 2000 – September 2010**	
	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)
Australia								
α_1	0.011	0.007	0.008	0.006	0.012	0.012	0.003	0.006
	(0.92)	(0.55)	(0.56)	(0.42)	(1.64)	(1.59)	(0.37)	(0.82)
α_2		0.026		0.010		-0.002		-0.020
		(1.11)		(0.37)		(-0.11)		(-1.52)
Austria								
α_1	0.003	0.002	0.014	0.024	0.034	0.031	0.024	0.027
	(0.69)	(0.48)	(1.37)	(2.20)**	(2.64)***	(2.31)**	(1.91)*	(2.01)**
α_2		0.005		-0.055		0.016		-0.015
		(0.59)		(-2.82)***		(0.66)		(-0.62)
Belgium								
α_1	0.025	0.018	0.023	0.023	0.022	0.021	0.011	0.015
	(3.95)***	(2.84)***	(2.20)**	(2.05)**	(2.73)***	(2.45)**	(0.95)	(1.25)
α_2		0.043		0.002		0.007		-0.024
		(3.76)***		(0.12)		(0.46)		(-1.10)
Canada								
α_1	0.013	0.010	0.013	0.011	0.008	0.008	0.009	0.010
	(1.45)	(1.05)	(1.24)	(1.03)	(1.03)	(1.01)	(0.99)	(1.12)
α_2		0.019		0.010		-0.002		-0.010
		(1.13)		(0.50)		(-0.11)		(-0.59)
Denmark								
α_1	0.001	-0.006	-0.001	-0.005	0.013	0.007	0.008	0.007
	(0.03)	(-0.79)	(-0.05)	(-0.48)	(1.32)	(0.68)	(0.74)	(0.68)
α_2		0.038		0.026		0.035		0.001
		(2.71)***		(1.41)		(1.96)*		(0.07)
France								
α_1	0.015	0.009	0.027	0.025	0.030	0.030	0.011	0.016
	(1.34)	(0.81)	(2.31)**	(2.07)**	(3.09)***	(2.93)***	(1.12)	(1.64)
α_2		0.033		0.010		0.000		-0.033
		(1.59)		(0.44)		(0.02)		(-1.83)*
Germany								
α_1	0.015	0.009	0.006	0.011	0.025	0.024	0.014	0.020
	(1.98)**	(1.18)	(0.52)	(0.97)	(2.41)**	(2.17)**	(1.19)	(1.59)
α_2		0.034		-0.032		0.008		-0.033
		(2.48)**		(-1.59)		(0.40)		(-1.49)
Hong Kong								
α_1	-0.005	-0.017	0.027	0.017	0.002	0.008	0.007	0.011
	(-0.19)	(-0.68)	(1.40)	(0.85)	(0.13)	(0.46)	(0.62)	(0.87)
α_2		0.075		0.059		-0.034		-0.020
		(1.65)		(1.63)		(-1.11)		(-0.90)
Italy								
α_1	0.016	0.011	0.026	0.018	0.044	0.040	0.012	0.016
	(1.43)	(0.91)	(1.91)*	(1.24)	(3.52)***	(3.01)***	(1.24)	(1.55)
α_2		0.034		0.052		0.028		-0.023
		(1.56)		(2.03)**		(1.16)		(-1.21)

Table III. Continued

	Sub-period 1: January 1970 - December 1979		Sub-period 2: January 1980 – December 1989		Sub-period 3: January 1990 – December 1999		Sub-period 4: January 2000 – September 2010	
	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)
Japan								
α_1	0.018	0.016	0.023	0.021	0.008	0.008	0.017	0.022
	(2.09)**	(1.75)*	(2.83)***	(2.51)**	(0.64)	(0.61)	(1.85)*	(2.26)**
α_2		0.014		0.009		-0.001		-0.028
		(0.81)		(0.60)		(-0.02)		(-1.59)
Netherlands								
α_1	0.025	0.019	0.015	0.011	0.021	0.024	0.011	0.016
	(2.98)***	(2.22)**	(1.47)	(1.06)	(2.60)**	(2.73)***	(1.03)	(1.46)
α_2		0.035		0.022		-0.013		-0.031
		(2.25)**		(1.14)		(-0.85)		(-1.54)
Norway								
α_1	0.005	-0.004	0.009	0.001	0.026	0.022	0.015	0.021
	(0.34)	(-0.29)	(0.57)	(0.05)	(2.06)**	(1.72)*	(1.17)	(1.56)
α_2		0.054		0.047		0.019		-0.034
		(2.06)**		(1.66)*		(0.79)		(-1.44)
Singapore								
α_1	0.010	-0.006	0.023	0.015	0.024	0.029	0.008	0.012
	(0.54)	(-0.34)	(1.50)	(0.93)	(1.86)*	(2.18)**	(0.70)	(0.95)
α_2		0.094		0.049		-0.032		-0.021
		(2.88)***		(1.70)*		(-1.33)		(-0.94)
Spain								
α_1	0.016	0.016	0.012	0.005	0.030	0.028	0.006	0.011
	(1.83)*	(1.68)*	(1.02)	(0.44)	(2.50)**	(2.21)**	(0.55)	(1.03)
α_2		0.004		0.039		0.012		-0.032
		(0.21)		(1.82)*		(0.52)		(-1.61)
Sweden								
α_1	0.025	0.021	0.019	0.017	0.025	0.022	0.020	0.023
	(3.01)***	(2.36)**	(1.65)	(1.37)	(1.95)*	(1.64)	(1.54)	(1.73)*
α_2		0.028		0.014		0.018		-0.021
		(1.77)*		(0.65)		(0.74)		(-0.86)
Switzerland								
α_1	0.015	0.005	0.003	0.005	0.017	0.017	0.004	0.008
	(1.63)	(0.57)	(0.31)	(0.52)	(1.83)*	(1.68)*	(0.51)	(0.98)
α_2		0.058		-0.013		0.004		-0.023
		(3.50)***		(-0.76)		(0.20)		(-1.59)
United Kingdom								
α_1	0.029	0.023	0.022	0.016	0.012	0.013	0.006	0.014
	(2.06)**	(1.56)	(2.17)**	(1.50)	(1.61)	(1.63)	(0.73)	(1.71)*
α_2		0.036		0.038		-0.005		-0.046
		(1.38)		(1.96)*		(-0.33)		(-3.21)***
United States								
α_1	0.012	0.011	0.007	0.003	0.011	0.011	0.006	0.010
	(1.41)	(1.28)	(0.75)	(0.28)	(1.51)	(1.45)	(0.71)	(1.15)
α_2		0.003		0.024		-0.001		-0.025
		(0.21)		(1.44)		(-0.06)		(-1.54)

Table IV. The Sell in May Effect: Sub-Period Results for Emerging Markets

This table reports the regression results of the Sell in May effect, performed on 32 emerging markets for the 3rd and the 4th sub-periods. Due to data availability, some countries do not contain data covering the full duration of the 3rd sub-period. In this case, the number of observations noted by "N" is the number of observations (months) available in the 3rd sub-period. The *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively. To reserve space, the estimates of coefficient μ are not reported.

	Sub-period 3: January 1990 – December 1999		**Sub-period 4: January 2000 – September 2010**		**Sub-period 3: January 1990 – December 1999**		**Sub-period 4: January 2000 – September 2010**	
	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)
	Argentina				**Brazil**			
α_1	0.048	0.055	0.026	0.014	0.072	0.047	0.010	0.014
	(1.40)	(1.52)	(1.24)	(0.67)	(1.92)*	(1.20)	(0.78)	(1.03)
α_2		-0.040		0.066		0.153		-0.022
		(-0.62)		(1.69)*		(2.17)**		(-0.92)
	Chile				**China (N = 84)**			
α_1	0.013	0.010	-0.000	-0.002	-0.009	0.007	0.000	0.007
	(0.93	(0.71)	(-0.05)	(-0.22)	(-0.32)	(0.24)	(0.02)	(0.45)
α_2		0.015		0.008		-0.096		-0.041
		(0.57)		(0.55)		(-1.81)*		(-1.38)
	Colombia (N = 84)				**Czech Republic (N = 60)**			
α_1	0.032	0.034	0.011	0.007	0.005	0.011	0.017	0.015
	(1.65)	(1.68)*	(0.79)	(0.47)	(0.24)	(0.49)	(1.33)	(1.12)
α_2		-0.014		0.024		-0.035		0.011
		(-0.38)		(0.90)		(-0.87)		(0.46)
	Egypt (N = 60)				**Finland**			
α_1	0.033	0.023	0.025	0.015	0.027	0.019	0.011	0.016
	(1.63)	(1.08)	(1.42)	(0.85)	(1.61)	(1.10)	(0.67)	(0.86)
α_2		0.063		0.054		0.046		-0.024
		(1.65)		(1.67)*		(1.46)		(-0.73)
	Greece				**Hungary (N = 60)**			
α_1	0.057	0.050	0.004	0.004	0.052	0.045	0.015	0.013
	(3.09)**	(2.57)**	(0.25)	(0.27)	(1.62)	(1.33)	(1.03)	(0.85)
α_2		0.044		-0.003		0.042		0.011
		(1.27)		(-0.11)		(0.68)		(0.40)
	India (N = 84)				**Indonesia**			
α_1	0.008	0.007	0.005	0.008	0.044	0.037	0.027	0.029
	(0.44)	(0.36)	(0.31)	(0.52)	(2.02)**	(1.61)	(1.76)*	(1.82)*
α_2		0.006		-0.020		0.044		-0.014
		(0.18)		(-0.73)		(1.05)		(-0.49)
	Ireland				**Israel (N = 84)**			
α_1	0.032	0.027	0.024	0.025	0.018	0.018	0.011	0.011
	(3.19)***	(2.60)**	(1.91)*	(1.91)*	(1.25)	(1.16)	(0.90)	(0.90)
α_2		0.028		-0.007		0.002		-0.004
		(1.51)		(-0.32)		(0.07)		(-0.16)
	Jordan				**Korea**			
α_1	0.023	0.022	-0.000	-0.006	0.012	0.003	0.022	0.021
	(2.94)***	(2.64)***	(-0.02)	(-0.55)	(0.61)	(0.17)	(1.54)	(1.44)
α_2		0.008		0.035		0.049		0.002
		(0.51)		(1.71)*		(1.38)		(0.07)

Table IV. Continued

	Sub-period 3: January 1990 – December 1999		Sub-period 4: January 2000 – September 2010		Sub-period 3: January 1990 – December 1999		Sub-period 4: January 2000 – September 2010	
	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)	Eq. (1)	Eq. (2)
	Malaysia				**Mexico**			
α_1	0.025	0.033	0.011	0.004	0.016	0.020	0.012	0.013
	(1.37)	(1.75)*	(1.13)	(0.44)	(0.98)	(1.17)	(1.09)	(1.16)
α_2		-0.046		0.037		-0.024		-0.009
		(-1.34)		(2.10)**		(-0.78)		(-0.42)
	Morocco (N = 60)				**New Zealand**			
α_1	0.024	0.023	0.029	0.026	0.005	0.004	0.010	0.010
	(2.32)**	(2.05)**	(3.05)***	(2.65)***	(0.51)	(0.33)	(1.20)	(1.20)
α_2		0.009		0.014		0.010		-0.003
		(0.47)		(0.78)		(0.49)		(-0.21)
	Poland (N = 84)				**Pakistan (N = 84)**			
α_1	0.035	0.024	0.008	0.009	0.013	0.014	0.023	0.013
	(0.93)	(0.63)	(0.56)	(0.62)	(0.49)	(0.52)	(1.18)	(0.64)
α_2		0.064		-0.008		-0.010		0.059
		(0.91)		(-0.29)		(-0.19)		(1.58)
	Peru (N = 84)[a]				**Philippines**			
α_1	0.015	0.021	0.011	0.012	0.032	0.032	0.002	-0.004
	(0.68)	(0.92)	(0.66)	(0.70)	(1.85)*	(1.75)*	(0.14)	(-0.31)
α_2		-0.037		-0.007		0.001		0.034
		(-0.90)		(-0.23)		(0.02)		(1.45)
	Portugal				**Russia (N = 60)**			
α_1	0.024	0.019	0.012	0.013	0.066	0.088	0.025	0.028
	(2.14)**	(1.65)	(1.23)	(1.30)	(1.01)	(1.28)	(1.29)	(1.36)
α_2		0.028		-0.008		-0.132		-0.016
		(1.30)		(-0.44)		(-1.06)		(-0.44)
	South Africa (N = 84)				**Sri Lanka (N = 84)**			
α_1	0.034	0.038	0.005	0.006	0.011	0.013	-0.049	-0.040
	(2.44)**	(2.50)**	(0.50)	(0.53)	(0.53)	(0.60)	(-0.62)	(-0.48)
α_2		-0.016		-0.004		-0.013		-0.053
		(-0.58)		(-0.19)		(-0.31)		(-0.37)
	Taiwan				**Thailand**			
α_1	0.060	0.065	0.025	0.022	0.024	0.016	0.013	0.011
	(3.03)***	(3.11)***	(1.83)*	(1.53)	(1.03)	(0.65)	(0.86)	(0.70)
α_2		-0.029		0.018		0.049		0.011
		(-0.75)		(0.69)		(1.12)		(0.38)
	Turkey				**Venezuela (N = 84)**		**(N = 96)**	
α_1	0.006	0.049	0.009	0.010	-0.004	0.012	-0.008	-0.015
	(2.06)**	(1.61)	(0.42)	(0.42)	(-0.13)	(0.34)	(-0.39)	(-0.71)
α_2		0.065		-0.002		-0.095		0.042
		(1.18)		(-0.06)		(-1.56)		(1.12)

Figure 1: Pre-Halloween and Post-Halloween Returns – Developed Markets

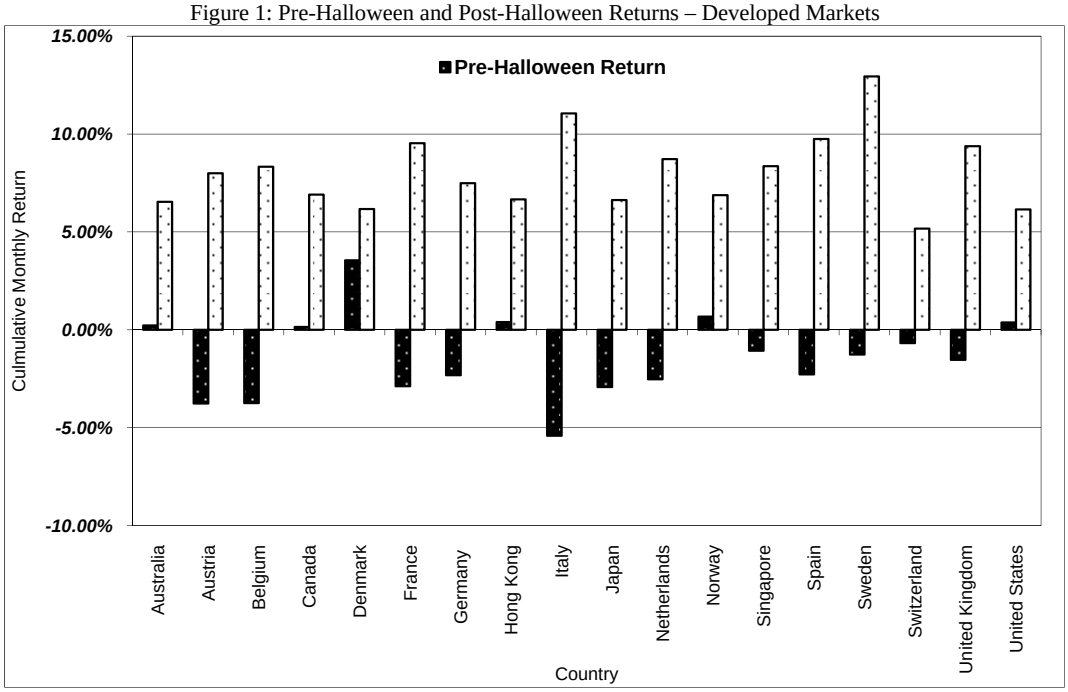
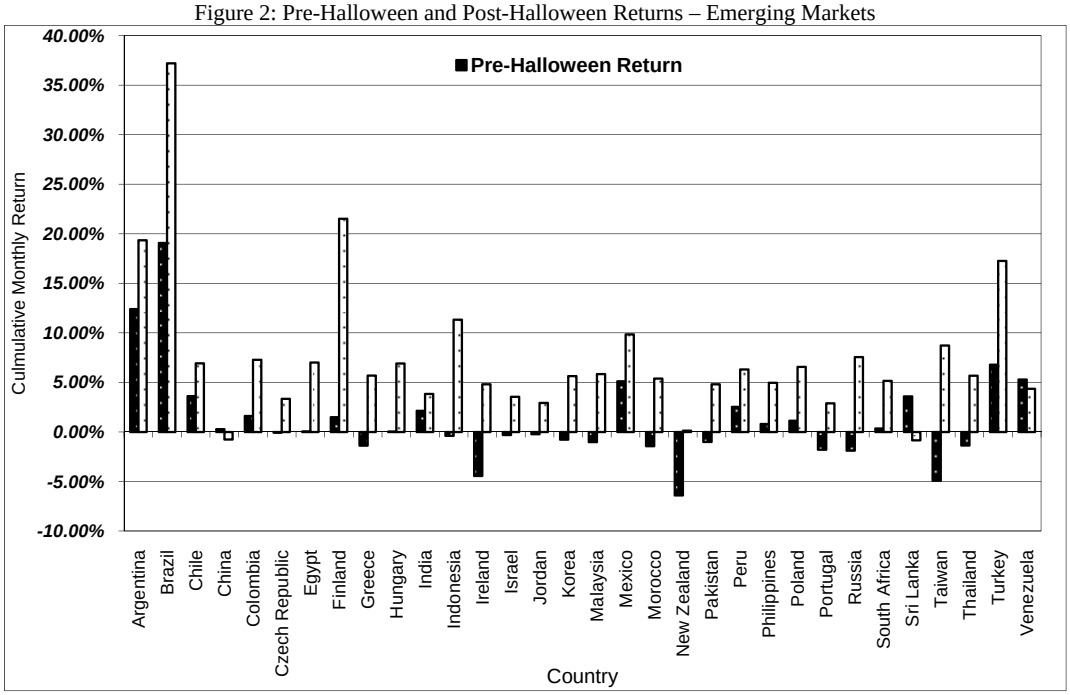


Figure 2: Pre-Halloween and Post-Halloween Returns – Emerging Markets



Reference

Bouman, Sven, and Ben Jacobsen. 2002, "The Halloween Indicator, 'Sell in May and Go Away': Another Puzzle." *The American Economic Review,* 92 (5), pp. 1618-1635.

Cao, Melanie, and Jason Wei. 2005. "Stock Market Returns: A note on Temperature Anomaly." *Journal of Banking & Finance*, 29 (6), pp. 1559-1573.

Ciccone, Stephen J. and Ahmad Etebari. 2007. "A Month-by-Month Examination of Long-Term Stock Returns." Working paper. **http://www.unh.edu/news/docs/ciccone-etebari_stocks.pdf**

Doeswijk, Ronald Q., 2008, "The Optimism Cycle: Sell in May." *De Economist,* 156, pp. 175-200.

Fama, Eugene F., 1970, "Efficient Capital Markets: A Review of Theory and Empirical Work." *Journal of Finance*, 25, pp. 383-417.

Jacobsen, Ben, and Wessel Marquering. 2008. "Is it the Weather?" *Journal of Banking & Finance*, 32 (4), pp. 526-540.

Lakonishok, Josef, and Seymour Smidt. 1988. "Are Seasonal Anomalies Real? A Ninety-Year Perspective."*The Review of Financial Studies*, 1 (4), pp. 403-425.

Lucey, Brian M. and Zhao, Shelly. 2006. "Halloween or January? Yet Another Puzzle." IIIS Discussion Paper Series Available at SSRN: http://ssrn.com/abstract=887861

Maberly, Edwin D., and Raylene M. Pierce. 2003. "The Halloween Effect and Japanese Equity Prices: Myth or Exploitable Anomaly." *Asia-Pacific Financial Markets*, 10 (4), pp. 319-334.

Maberly, Edwin D., and Raylene M. Pierce. 2004. "Stock Market Efficiency Withstands another Challenge: Solving the 'Sell in May/Buy After Halloween' Puzzle." *Econ Journal Watch*, 1 (1), pp. 29-46.

Malkiel, Burton G., 2003."The Efficient Market Hypothesis and Its Critics."*The Journal of Economic Perspectives*, 17 (1), pp. 59-82.

Reichling, Peter, and Elena Moskalenko. 2007. "Sell in May and Go Away-Summer Break also at the Russian Stock Market." Working Paper at the University at Magdeburg, Germany.http://www.uni-magdeburg.de/finance/PDF-Free/Sell_in_May.pdf